

Remarks

The Office Action mailed September 20, 2004 has been carefully reviewed and the following remarks are made in consequence thereof.

Claims 1-20 are now pending in this application, of which claims. It is respectfully submitted that the pending claims define allowable subject matter.

The rejection of Claims 1-20 under 35 U.S.C. § 103 as being unpatentable over Koyasu et al. (U.S. Patent Application Publication 2003/0205402) in view of Shoffner (U.S. Patent No. 4,892,442) is respectfully traversed.

It is respectfully submitted, for the reasons set forth below, that a prima facie case of obviousness has not been established. More specifically, it is submitted that the cited references collectively fail to teach each recitation of the presently pending claims, and that there is no motivation to combine the teaching of the cited references in the manner set forth in the Office Action.

The Office Action cites Figures 3, 5 and 6 of Koyasu et al. as disclosing a cable having a cylindrical core, at least one twisted pair of insulated wires, and a jacket surrounding the core. It is acknowledged in the Office Action that Koyasu et al. does not disclose the jacking as having a spline projecting inward from an inner surface of the jacket.

Shoffner is cited as disclosing a jacket comprising at least one spline projecting inward from an inner surface of the jacket. However, Shoffner describes an innerduct (10) which is placed in an existing, typically subterranean conduit, and the innerduct provides for low friction placement of cables therein, and a hazardless environment for fiber optic cables (14). Notably, Shoffner does not describe the fiber optic cables (14) themselves, but rather describes the innerduct which receives the cables (14). The innerduct (10) is located in a fixed position, and

the cables are introduced into the innerduct for protection thereof. The inner surface of the innerduct is lubricated to lower the coefficient of friction as the cables are inserted.

The present invention is clearly directed to a cable, and the disclosure of Shoffner does not relate to the structure of the cables (14), but rather to the structure of an innerduct (10) which is separately provided from the cables. It is therefore respectfully submitted that Shoffner adds nothing to the teaching of Koyasu et al. with respect to the present invention.

Moreover, Shoffner explains that inner projecting ribs (20) in the innerduct (10) serve three purposes: (1) to reduce the contact surface area between the cables and the innerduct and therefore reduce associated friction when the cables are installed into the innerduct, (2) enhance heat dissipation of the innerduct, and (3) enhance the structural integrity of the innerduct. See Shoffner col. 4, lines 19-50.

Notably, Shoffner does not describe the problem toward which the present invention is directed, namely to prevent relative movement of a cable jacket with respect to a core and preserve headroom of the cable without introducing additional cost and complexity to the cable which may impair its flexibility. Moreover, the provision of inner projecting ribs in the Shoffner innerduct is incapable of solving this problem and is inconsistent with the teaching of Shoffner. For example, the recited splines of the instant invention prevent relative movement of the cable jacket with respect to a cable core, while the ribs of Shoffner are provided to facilitate movement of the cables and jackets with respect to the innerduct. Shoffner teaches that the ribs in the innerduct increase the structural strength and rigidity of the innerduct while the present invention avoids adversely affecting the flexibility of the cable. Thus, the teaching of the present specification and the purpose of the present invention are not compatible with the teaching of Shoffner and the purpose of the ribs in the Shoffner innerduct. Because of these differences and inconsistencies, it is respectfully submitted that one of ordinary skill at the time the invention was made would not look to Shoffner as providing a solution to the difficulties faced.

Still further, Koyasu et al. does not recognize the particular problem toward which the present invention is directed, namely to prevent relative movement of the cable jacket with respect to the core and preserve headroom of the cable without introducing additional cost and complexity to the cable which may impair its flexibility. As presently understood, Koyasu et al. only address the problem of the twisted pairs in the cable moving relative to one another within the jacket of the cable. Thus, absent some reason why the structure of the present claims would be desirable in the cable of Koyasu et al. to prevent the relative movement between the cable jacket and the cable core, which Applicants submit is not found in the Koyasu et al. reference, there is no motivation for one of ordinary skill in the art to make the proposed modification to the Koyasu et al. cable to render the invention obvious.

Thus, neither Koyasu et al. or Shoffner, separately or in combination, recognize the particular problems addressed by the present invention or describe or suggest any structure that would overcome these problems. Consequently it is respectfully submitted that the combination of teachings does not render the instant claims obvious.

Claim 1 recites a cable comprising "a cylindrical core comprising at least one twisted pair of insulated wires," and "a jacket surrounding said core, said jacket comprising at least one spline projecting inward from an inner surface of said jacket, wherein at least a portion of said twisted pair is positioned between said spline and a center of said core, thereby preventing relative movement of said jacket with respect to said core."

It is respectfully submitted that Koyasu et al. in view of Shoffner is not suggestive of the present invention. As noted above, neither the Koyasu et al. cable nor the Shoffner cables include any structure that would prevent relative movement of the jacket with respect to the cable, and consequently each of the Koyasu et al. cable and the Shoffner cables lack the structure and function recited in claim 1.

For the reasons set forth above, claim 1 is submitted to be patentable over Koyasu et al. in view of Shoffner.

Claims 2-9 depend from claim 1, and when the recitations of claim 2-9 are considered in combination with the recitations of claim 1, claims 2-9 are likewise submitted to be patentable over Koyasu et al. in view of Shoffner.

Claim 10 recites a cable comprising “a core comprising a central core filler and a plurality of twisted pairs of insulated wires extending about said core filler” and “a jacket surrounding said core, said jacket comprising a round inner surface and at least one spline projecting inward from said inner surface, wherein said at least one spline is adapted to prevent relative movement of said jacket and core without separating one of said plurality of twisted pairs from another of said plurality of twisted pairs.”

For the reasons set forth above, Koyasu et al. and Shoffner, considered separately and combination, fail to describe or suggest the structure and function of the cable recited in claim 10, and claim 10 is accordingly submitted to be patentable over Koyasu et al. in view of Shoffner.

Claims 11-18 depend from claim 10, and when the recitations of claims 11-18 are considered in combination with the recitations of claim 10, Applicants submit that claims 11-18 are likewise patentable over Koyasu et al. in view of Shoffner.

Claim 19 recites a cable comprising “a round core comprising a central core filler and a plurality of twisted pairs of insulated wires extending about said core filler” and “a round jacket surrounding said core, said jacket comprising an inner surface and a plurality of splines projecting inward from said inner surface, wherein said plurality of splines are adapted to prevent relative movement of said jacket and core without separating said plurality of twisted pairs from one another.”

Neither of Koyasu et al. nor Shoffner, considered separately or in combination, describe or suggest a cable having a jacket comprising an inner surface and a plurality of splines projecting inward from the inner surface, wherein the plurality of splines are adapted to prevent relative movement of the jacket and core without separating the plurality of twisted pairs from one another. Claim 19 is therefore submitted to be patentable over Koyasu et al. in view of Shoffner.

Claim 20 depends from claim 19, and when the recitations of claim 20 are considered in combination with the recitations of claim 19, claim 20 is likewise submitted to be patentable over Koyasu et al. in view of Shoffner.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1-20 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



Bruce T. Atkins
Registration No. 43,476
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070